AMENDMENT

IN THE CLAIMS:

Claim 1 (currently amended): An electron microscope, comprising:

a main vacuum chamber housing a stage therein and connected to a vacuum pump;

a load lock for loading a specimen into said main vacuum chamber;

a minicolumn; and[[,]]

a mini-environment being capable of housing said minicolumn and being capable of isolating said minicolumn from said main vacuum chamber.

Claim 2 (previously presented): The electron microscope of claim 1, wherein said mini-environment comprises an opening to the main chamber for introducing said minicolumn into the main vacuum chamber and extracting said minicolumn from said main vacuum chamber.

Claim 3 (previously presented): The electron microscope of claim 1, wherein said mini-environment comprises a bellows structure for introducing said minicolumn into the main vacuum chamber and extracting said minicolumn from said main vacuum chamber.

Claim 4 (original): The electron microscope of claim 1, wherein said mini-environment comprises an evacuation outlet.

Claim 5 (original): The electron microscope of claim 1, wherein said mini-environment comprises a second chamber having an opening into said main chamber, and a valve structure for hermetically sealing said opening.

Claim 6 (previously presented): The electron microscope of claim 5, wherein said valve comprises a sealing plate that is pivoted on a shaft, which shaft is capable of elevation motion.

Claim 7 (currently amended): An electron microscope for inspection of a semiconductor wafer, comprising:

a main vacuum chamber housing a stage therein and connected to a vacuum pump;

a load lock for loading ~~a specimen~~ said wafer into said main vacuum chamber; [[and]]

a turntable stage for placing said wafer thereupon;

a mounting arm positioned inside said main vacuum chamber, said mounting arm having a motion mechanism imparting one of rotational or linear translational motion to the mounting arm; and

a minicolumn non-translatably ~~positioned~~ mounted on said mounting arm inside said main vacuum chamber;

wherein inspection of every point upon said wafer is enabled by the turntable rotating the wafer, and the mounting arm translating or rotating the minicolumn.

Claim 8 (currently amended): The electron microscope of claim [[7]] 2, further comprising a removable back plate attached to said main chamber, and wherein said minicolumn is connected to the removable back plate.

Claim 9 (currently amended): The electron microscope of claim 7, further comprising at least one tilted minicolumn ~~situated inside said main vacuum chamber~~ mounted on said mounting arm at a tilt with respect to a perpendicular to a surface of the stage.

Claim 10 (currently amended): The electron microscope of claim 9, wherein the tilt of said tilted minicolumn is variable.

Claim 11 (currently amended): An electron microscope, comprising:

a main vacuum chamber housing a stage therein and connected to a vacuum pump;

a load lock for loading a specimen into said main vacuum chamber;

a minicolumn non-translatably positioned inside said main chamber; and

~~The electron microscope of claim 7, further comprising~~ a vacuum pump situated inside the main vacuum chamber and external to and connected to the minicolumn.

Claim 12 (canceled)

Claim 13 (currently amended): The electron microscope of claim [[12]] 7, further comprising a radial pivot, and wherein said mounting arm is connected to said radial pivot.

Claim 14 (currently amended): The electron microscope of claim [[12]] 7, further comprising a linear motion carriage, and wherein said ~~holding~~ mounting arm is connected to said linear motion carriage.

Claim 15 (currently amended): The electron microscope of claim [[12]] 7, further comprising at least one additional minicolumn connected to said ~~holding~~ mounting arm.

Claim 16 (previously presented): The electron microscope of claim 15, wherein said at least one additional minicolumn has a tilt with respect to a perpendicular to a surface of the turntable stage.

Claim 17 (original): The electron microscope of claim 16, wherein the tilt is variable.

Claim 18 (currently amended): An electron microscope, comprising:

a main vacuum chamber housing a stage therein and connected to a vacuum pump;

a load lock for loading a specimen into said main vacuum chamber;

a plurality of minicolumns; and

a mini-environment being capable of housing said minicolumns and being capable of isolating said minicolumns from said main vacuum chamber.

Claim 19 (previously presented): The electron microscope of claim 18, wherein said mini-environment comprises an opening to the main chamber for introducing said minicolumns into the main vacuum chamber and extracting said minicolumns from said main vacuum chamber.

Claim 20 (previously presented): The electron microscope of claim 18, wherein said mini-environment comprises a bellows structure for introducing said minicolumns into the main vacuum chamber and extracting said minicolumns from said main vacuum chamber.

Claim 21 (currently amended): An electron microscope comprising:

a main vacuum chamber housing a stage therein and connected to a vacuum pump;

a load lock for loading a specimen into said main vacuum chamber; and

a plurality of minicolumns non-translatably positioned inside said main chamber, wherein each of said minicolumns has a lens arrangement consisting essentially of a plurality of conducting electrodes and at least one insulator interposed between said conducting electrodes, and wherein said lens arrangement is of a diameter no larger than three centimeters and height of no more than one centimeter.

Claim 22 (previously presented): The electron microscope of claim 21, wherein at least one of said minicolumns is situated inside the main vacuum chamber at a tilt with respect to a perpendicular to a surface of the stage.

Claim 23 (previously presented): The electron microscope of claim 22, wherein the tilt is variable.

Claim 24 (currently amended): An electron microscope for semiconductor wafer inspection, comprising:

a main vacuum chamber connected to a vacuum pump and housing:

a turntable stage for holding said wafer thereupon;

a holding arm capable of one of translational or rotational motion; and,

a plurality of minicolumns attached to said holding arm;

wherein inspection of every point upon said wafer is enabled by the turntable rotating the wafer, and the holding arm translating or rotating the minicolumns.

Claim 25 (previously presented): The electron microscope of claim 24, wherein at least one of said minicolumns has a tilt with respect to a perpendicular to a surface of the stage.

Claim 26 (previously presented): The electron microscope of claim 25, wherein said tilt is variable.

Claim 27 (previously presented): The electron microscope of claim 1 wherein the mini-environment further comprises a back plate.

Claim 28 (previously presented): The electron microscope of claim 27 wherein the minicolumn is connected to the back plate.

Claim 29 (previously presented): The electron microscope of claim 5 wherein the mini-environment further comprises a back plate.

Claim 30 (previously presented): The electron microscope of claim 29 wherein the minicolumn is connected to the back plate.

Claim 31 (previously presented): The electron microscope of claim 7 wherein the minicolumn is disposed at a tilt with respect to a perpendicular to a surface of the stage.

Claim 32 (previously presented): The electron microscope of claim 31 wherein the tilt is variable.

Claim 33 (new): An electron microscope for inspection of a semiconductor wafer, comprising:

a main vacuum chamber housing a stage therein and connected to a vacuum pump;

a load lock for loading said wafer into said main vacuum chamber;

a turntable stage for placing said wafer thereupon;

a mounting arm positioned inside said main vacuum chamber, said mounting arm having a motion mechanism imparting rotational motion to the mounting arm in a plane parallel to a surface of the turntable stage; and

a minicolumn non-translatably mounted on said mounting arm inside said main vacuum chamber;

wherein inspection of every point upon said wafer is enabled by the turntable rotating the wafer, and the mounting arm rotating the minicolumn.